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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,817	01/09/2004	Markus Schwambera	03345-P0047A	1549

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EXAMINER	
MACARTHUR, SYLVIA	
ART UNIT	**PAPER NUMBER**
1763	

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/754,817	SCHWAMBERA ET AL.	
	Examiner	Art Unit	
	Sylvia R. MacArthur	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *1 and 3-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2 and 11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Wollam (US 3,783,822).

Regarding claim 2: Wollam teaches an apparatus for use in deposition of films from a vapor phase. Regarding claim 1: The apparatus of Wollam comprises substrates (disks 7-10) are resting on rotationally drivable substrate holders in a chamber of the apparatus. Fig. 1 illustrates that the holders are disposed around the rotational center of the rotationally drivable substrate holder carrier. Opposite the process chamber base there is a process chamber cover see Fig. 1 and col.4 lines 1-5. The central gas inlet is illustrates as the outlet of mixer 5. A central region of the chamber base gives off heat via heater 21.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 11-15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wollam in view of Burk, Jr.

The teachings of Wollam were discussed above. Wollam further teaches a center plate (driven surface 14)

Regarding claim 11: Wollam fails to teach a gas cushion.

Burk, Jr. is an apparatus for depositing crystalline layers on crystalline substrates resting on rotationally drivable substrate holders 88 in a process chamber 16 of the apparatus, the substrate holders being disposed around the rotational center of a rotationally drivable substrate holder carrier 22which substrate holders together with the substrate holder carrier form a process chamber base 29, opposite which there is a process chamber cover with a central gas inlet element 32 the central region of the process chamber base giving off heat to one or more gaseous starting materials introduced into the process chamber through the gas inlet element as a result of heating characterized in that the central region of the process chamber base is rotationally drivable in relation to the substrate holder carrier and the process chamber cover or the gas inlet element, see col. 2 lines 36-43.

Regarding claim 11: Burk, Jr teaches a gas cushion., see abstract and col.4 lines 10-25. The motivation to modify the apparatus of Wollam to provide a gas cushion is levitate the wafers on the gas in the holder and cause the wafer to rotate the wafer in the cavities. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to combine the teachings of Wollam and Burk et al.

Regarding claim 12: Apparatus according to Claim 11, characterized in that a thermal conductivity of the gas cushion of Burk et al carrying and rotationally driving the center plate

can be set by choosing the gas mixture, the gas mixture comprising a gas with a high thermal conductivity and a gas with a low thermal conductivity, see col. 2 lines 49-54.

Regarding claim 13: Apparatus according to Claim 11, characterized in that the center plate consists of graphite, ceramic or quartz, see col. 1 lines 60-68 of Wollam.

Regarding claim 14: Apparatus according to Claim 11, characterized in that the center plate rotates in the same direction as or in the opposite direction to the substrate holder carrier, see Fig. 1 of Wollam

Regarding claim 15: Apparatus according to Claim 11, characterized in that the center plate is carried by substrate holder carrier, see Fig. 2 of Wollam.

Regarding claim 18: Wollam teaches that the center plate is rotated by a support rotor 15 (drive shaft), see Figs. 1 and 2.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wollam in view of Burk, Jr as applied to claims 11-15 and 18 above, and further in view of Hey et al.

The teachings of Wollam in view of Burk, Jr were discussed above.

The teachings of Wollam and Burk, Jr. both individually and collectively fail to teach or suggest clamping plates.

Hey et al teaches rotationally drivable substrate holders 30 with a central gas inlet 50 wherein the substrate holder comprises more than one pad that is held centrally by two clamping plates, the center plate lying above an uppermost of the two clamping plates, see cols. 3-5 of Hey et al. The motivation to modify the apparatus of Wollam in combination with Burk, Jr is to enhance the support of the wafer with clamps during the rotation of the wafers. Thus, it would have been obvious for one of ordinary skill in the

art at the time of the claimed invention to provide clamp plates in the apparatus of Wollam as modified by Burk, Jr.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wollam in view of Burk, Jr as applied to claims 11-15 and 18 above, and further in view of Van Geelen et al.

The teachings of Wollam in view of Burk, Jr were discussed above.

The teachings of Wollam and Burk, Jr. both individually and collectively fail to teach or suggest a coaxial supply of gas.

Van Geelen et al teaches rotationally drivable substrate holders with a gas inlet element, see Figs.1 and 2. Van Geelen teaches a gas cushion see abstract and col.4 lines 49-67 wherein the gas cushion features a coaxial supply line of gas streams forming the gas cushions , see Fig.1. The motivation to provide a coaxial supply of gas to the gas cushion is to allow the gas to mix prior to their introduction to the cushion this allows for a more uniform gas supply. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a coaxial gas supply as taught by Van Geelen et al.

Response to Arguments

7. Applicant's arguments with respect to claims 2 and 11-18 have been considered but are moot in view of the new ground(s) of rejection.

The prior art of Wollam was introduced to teach a rotating center plate in response to applicant's argument that the previous office action failed to consider this claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the hours of 8:30 a.m. and 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sylvia R MacArthur
Patent Examiner
Art Unit 1763

February 21, 2006